ORDER NO. APD8801867

Service Manual

AUTO PRODUCTS

CX-M120EN

STEREO POWER AMPLIFIER

Specifications

Power Supply	: DC 12V (11 ~ 16V) Test Voltage 14.4V Negative Ground
Current Consumption	: 8A (at 30W + 30W output)
Speaker Impedance	: 4Ω ~ 8Ω
Power output	: 2 x 30W (1,000Hz, 1% at 4Ω)
Maximum Power Output	: 2 x 60W (at 4Ω)
Total Harmonic Distortion	
at 20W Output	: 0.09% (20Hz ~ 20,000Hz)
at 20W Output	: 0.07% (1,000Hz)
Signal to Noise Ratio	: 100 dB (1HF. A)
Frequency Response	: 5Hz ~ 100,000Hz
Damping Factor	: 60 (at 4Ω)
Input Sensitivily	: 300mV
Input Impedance	: More than 10kΩ
Dimensions	: 255(W) x 120(D) x 55(H) mm
Weight	: 1.6Kg

NOTE:
Specifications and the design are subject to possible modification without notice due to improvements.

MC-Service

Panasonic

Matsushita Electric Trading Co., Ltd.
P. O. Box 288, Central Osaka, Japan

CX-M120EN

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FEATURES

- A DC-DC converter type power supply is built in.
- A high-through-rate IC is mounted after the preamplifier.
- The high-power design ensures enjoyment of sound in a high dynamic range.
- An aluminum radiator is employed.
- The power supply is automaticallyy turned on and off by remote control from or tuner.
- A floating input system is employed.
- Can be connected to other sets having DIN or RCA terminals.
- The volume balance of tuner, deck, speaker, etc. can be controlled using the gain control knob.

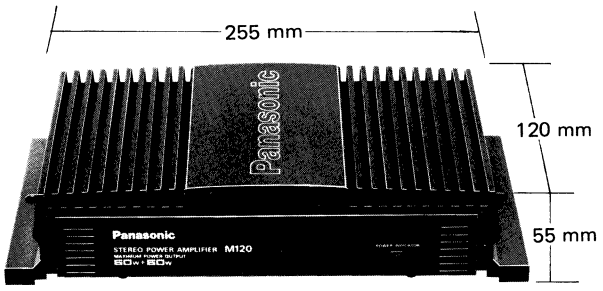
FUSE REPLACEMENT

Be sure to use a fuse of specified rating (20A, 15A, 3A) replancing a blown fuse.
Fuses rated at higher capacity, use of any subsitiute, or connection without a fuse may result in a fire hazard or damage to the unit.
If the replacement fuse fails, contact your nearest authorized Panasonic Service Center.

OUTSIDE CLEANING

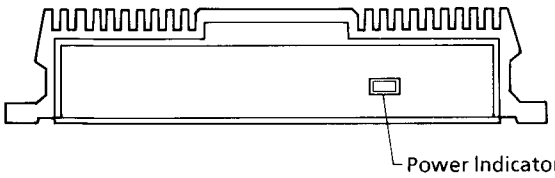
To clean the outside of the set (escutcheon and chassis), use a soft cloth to wipe the surface.
Do not use benzine, thinner, or any other type of solvent.

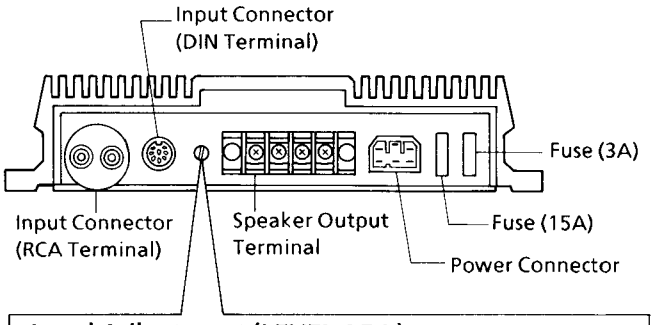
DIMENSIONS



OPERATION

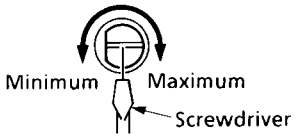
- This unit is automatically switched on and off if the power switch of the tape player / radio is turned on and off. The power indicator lights up when the tape player / radio is turned on.
- Due to its large output, the current consumption of the unit is also large; therefore, the unit should not be used for more than 30 minutes with the engine in an idling state or stopped. Otherwise, the battery may deteriorate so that starting of the engine may become impossible.
- If abnormal conditions occur, the protector circuit activates and the audio output will not be heard. In this case, immediately switch off the power of the tape player / radio or / and shut the engine off of the car. Check the wiring connection and find out the cause. Operate the unit only after correcting the problem completely.
  Overload Protector Circuit: This circuit serves as a protection for the power amplifier when a short circuit occurs, such as in the speaker output terminal, etc.
  Heat Protector Circuit: This circuit serves as a protection to the power amplifier when temperature exceeds 100°C.





Level Adjustment (LEVEL ADJ.)

- If different types of speakers or amplifiers are used in a multi-amplifier system, the acoustical output from each speaker may not be balanced properly depending on the speaker's sensitivity and the amplifier's gain. In such case, use a flat-head screwdriver to adjust the level until the output from each speaker is balanced.



- When used with other components designed for amplifiers with lower sensitivity, reduce the amplifiers sensitivity by turning the level adjustment counterclockwise.

BEFORE INSTALLING AND WIRING CONNECTIONS

- This equipment is designed to be used only in a 12-Volt, DC battery system with negative ground.
- For installation of the unit, please consult your nearest Panasonic dealer.
- The speakers to be used with the amplifier should have more than 60W of maximum input. Use of speakers with small input ratings can result in damage to the speakers.
- The speaker cord and the power amplifier unit should be kept away (about 30cm apart) from the antenna and antenna extension cord when installing and making wiring connection.
- The recommended locations for installation are under the front seat or the parcel tray. However, avoid the following locations under any circumstances:
  - Near the car heaters or in the enclosed spaces (under the carpet or in the glove box) because of the poor ventilation.
  - On the floor near the doors, because the floor often gets wet. On the driver's floor because it hinders driving.

CAUTION
- Use ungrounded speakers only.
- Do not ground any of the speaker leads.
- To prevent damage to unit be sure to follow the wire connections diagram at reverse side.
- Be sure to insulate exposed wiring so as to protect it from short-circuit if touched with some metal item.

NOTE:
- The Power Extension Cord ② should be kept away from the speaker leads.
- Connect the power leads after other connections are made.
- Be sure to connect the yellow power lead to the positive terminal (+) of the battery or fuse block (BAT) terminal.
- Please carefully read the operating instructions of the respective equipment before connecting it to this unit.

NOTE: For installation to cars equipped with trip or navigational computer, all electronic memory settings previously registered on the computer would fade out when the battery terminal is disconnected. For this type of cars, battery could not be disconnected (unless necessary) thus, wiring connection and installation of this unit should be carefully done and short-circuit should be avoided.

Speaker Selection

This unit consists of two amplifiers with rated output of 30W per channel. Therefore, please use speakers with 30W continuous power rating or more (with max. 60W input or more). When speakers with input capacity less than 30W are used, they can be damaged.

- The speaker impedance should be 4 ~ 8 ohms. If the impedance is too large or too small, it affects the output and may result in damage to the speaker or this unit.

INSTALLATION

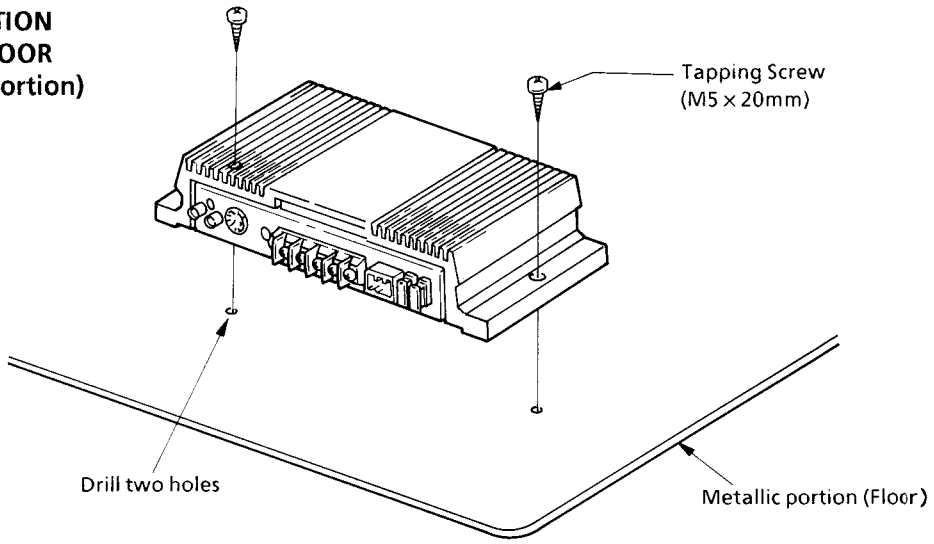
Installation Accessories

The unit is supplied with the following accessories:

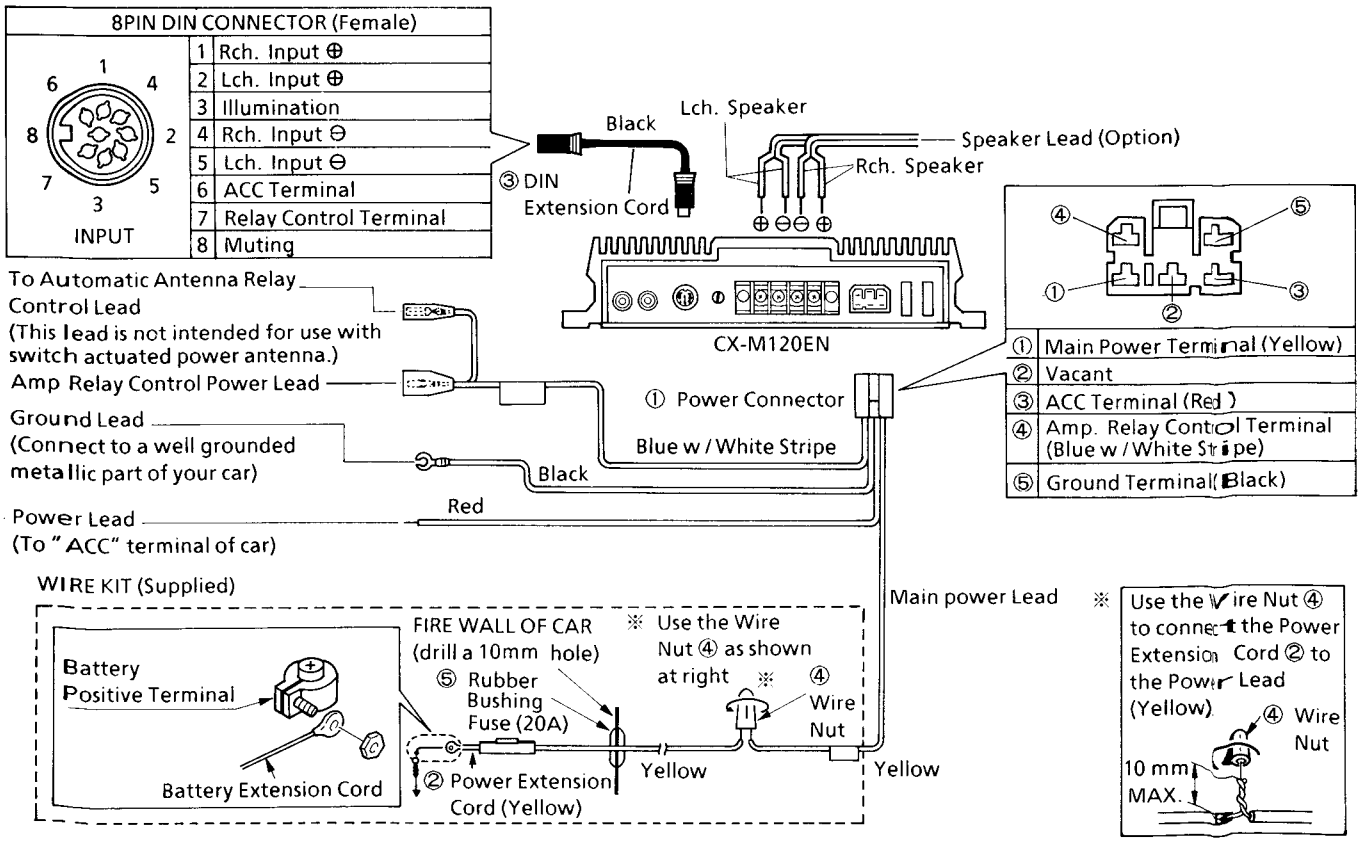
No.	Item	Q'ty
①	Power Connector	1
②	Power Extension Cord (2.5m)	1
③	DIN Extension Cord (1.5m)	1

No.	Item	Q'ty
④	Wire Nut	1
⑤	Rubber Bushing	1
⑥	Tapping Screw (M5 x 20mm)	2

Example: **INSTALLATION ON THE FLOOR (Metallic portion)**

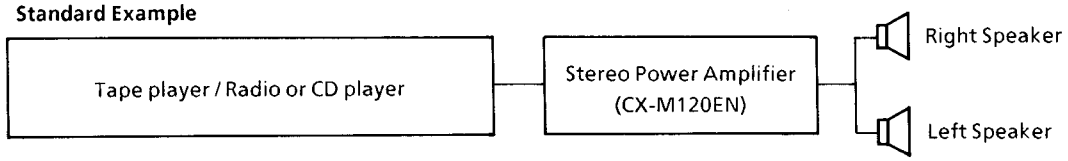


WIRING DESCRIPTION

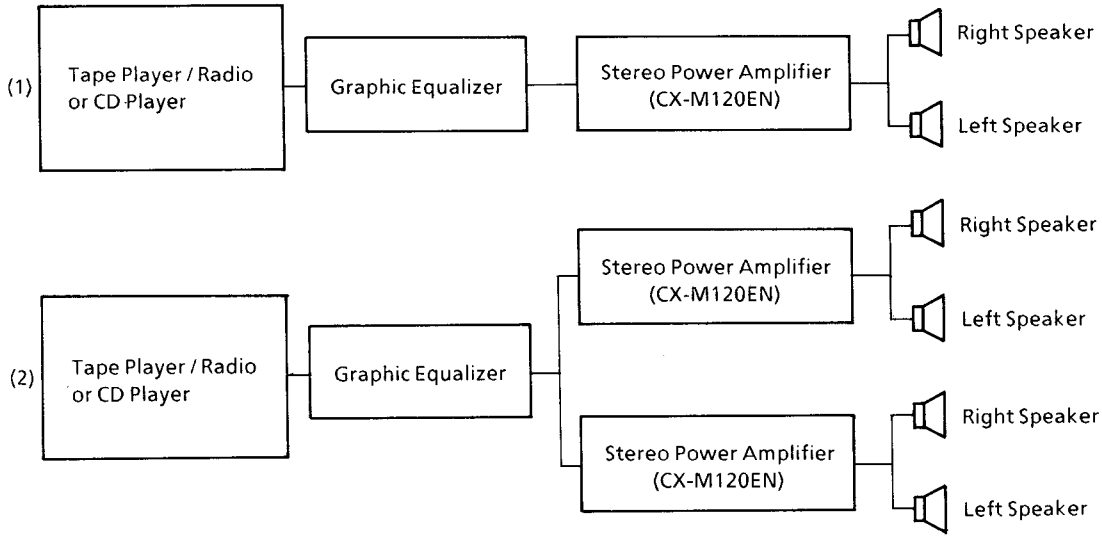

8PIN DIN CONNECTOR (Female)
1 Rch. Input ⊕
2 Lch. Input ⊕
3 Illumination
4 Rch. Input ⊖
5 Lch. Input ⊖
6 ACC Terminal
7 Relay Control Terminal
8 Muting
INPUT
Black
Lch. Speaker
Speaker Lead (Option)
Rch. Speaker
③ DIN Extension Cord
CX-M120EN
To Automatic Antenna Relay Control Lead
(This lead is not intended for use with switch actuated power antenna.)
Amp Relay Control Power Lead
Ground Lead
(Connect to a well grounded metallic part of your car)
Power Lead
(To "ACC" terminal of car)
① Power Connector
Blue w / White Stripe
Black
Red
① Main Power Terminal (Yellow)
② Vacant
③ ACC Terminal (Red)
④ Amp. Relay Control Terminal (Blue w / White Stripe)
⑤ Ground Terminal (Black)
WIRE KIT (Supplied)
Battery Positive Terminal
Battery Extension Cord
FIRE WALL OF CAR (drill a 10mm hole)
⑤ Rubber Bushing
Fuse (20A)
② Power Extension Cord (Yellow)
※ Use the Wire Nut ④ as shown at right
④ Wire Nut
Yellow
Main power Lead
Yellow
※ Use the Wire Nut ④ to connect the Power Extension Cord ② to the Power Lead (Yellow).
④ Wire Nut
10 mm MAX.

SYSTEM DIAGRAM

- **Standard Example**



- **Other Examples**

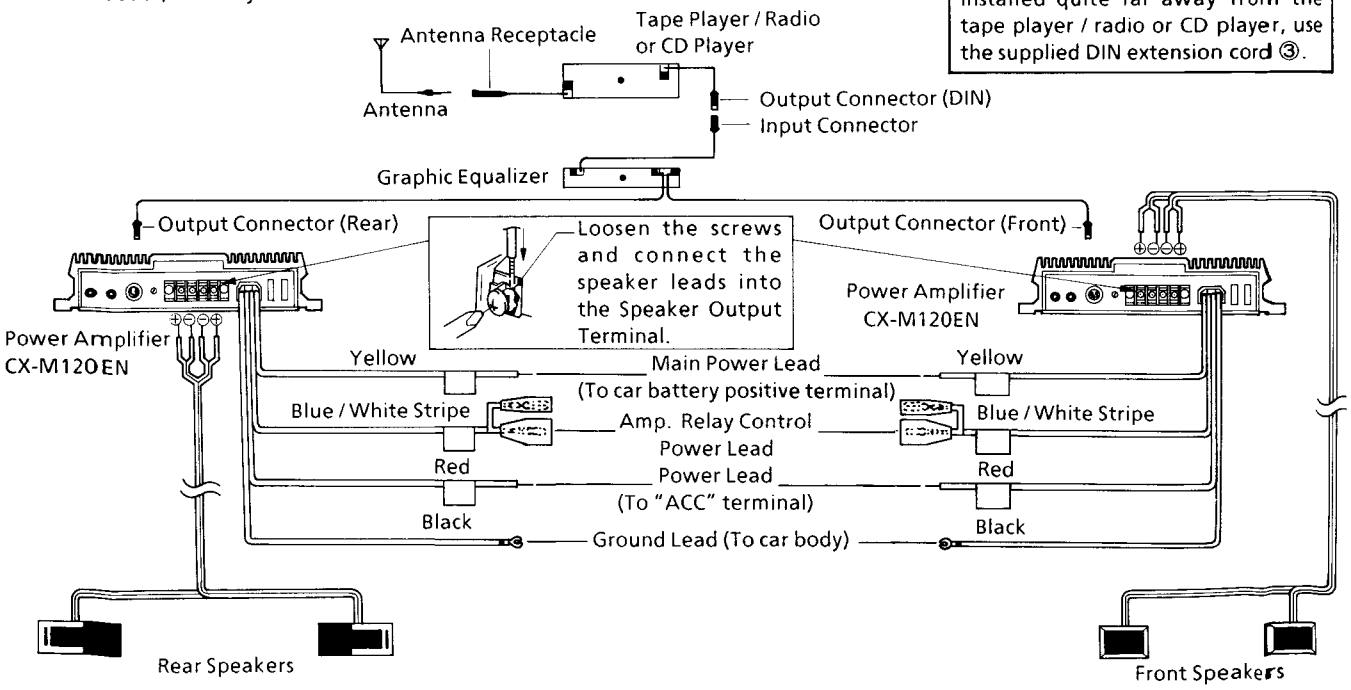


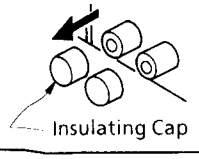
COMPOSITION AND WIRING CONNECTION

Before connecting:

- Disconnect the negative side of the battery to prevent short-circuit during wiring.
- If in doubt, consult your nearest dealer.

NOTE:
If the power amplifier (s) is / are to be installed quite far away from the tape player / radio or CD player, use the supplied DIN extension cord ③.





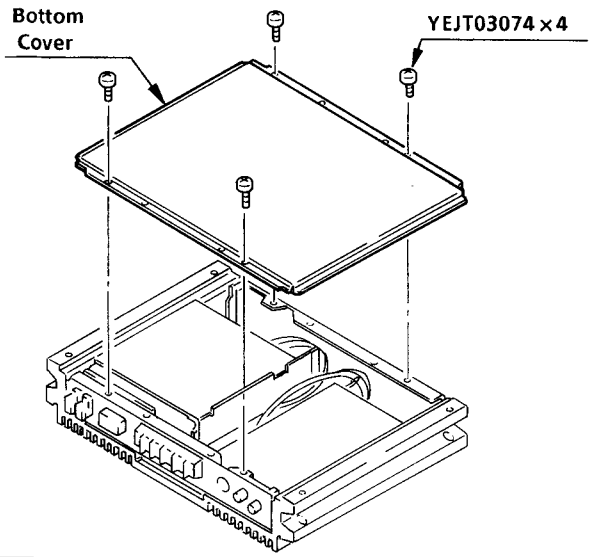
RCA Terminal (Insulating Cap)

- When using the RCA terminal, remove these caps and connect the Pre-Amp Output Connector (RCA).
- Do not remove the caps unless necessary.

DISASSEMBLY INSTRUCTIONS

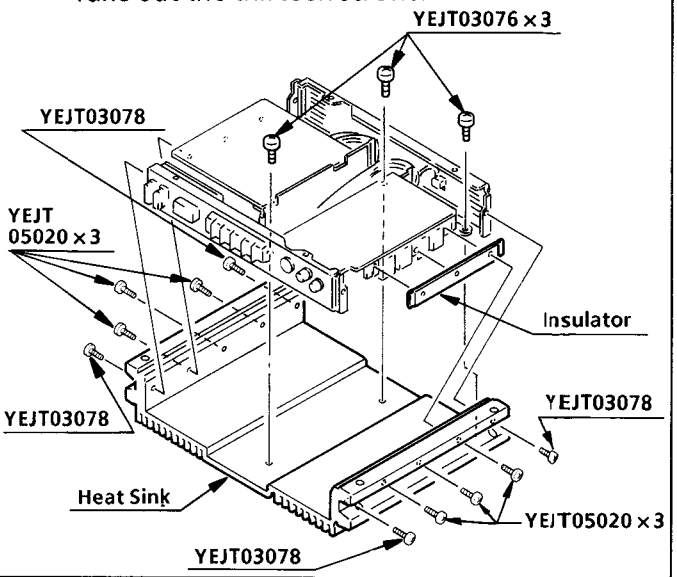
1) BOTTOM COVER REMOVAL

- Take out the four screws.



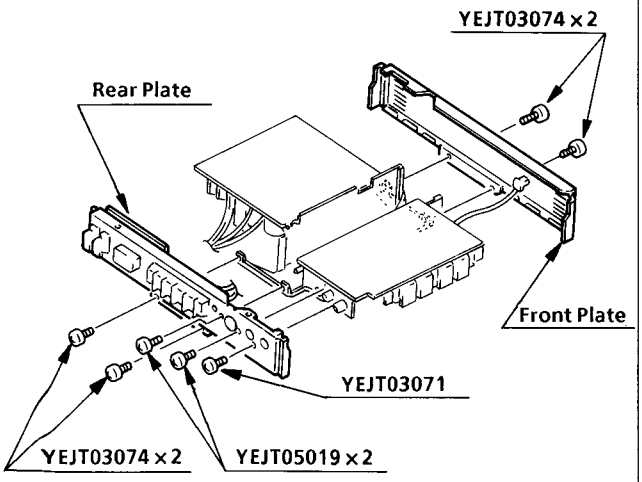
2) HEAT SINK REMOVAL

- Take out the thirteen screws.



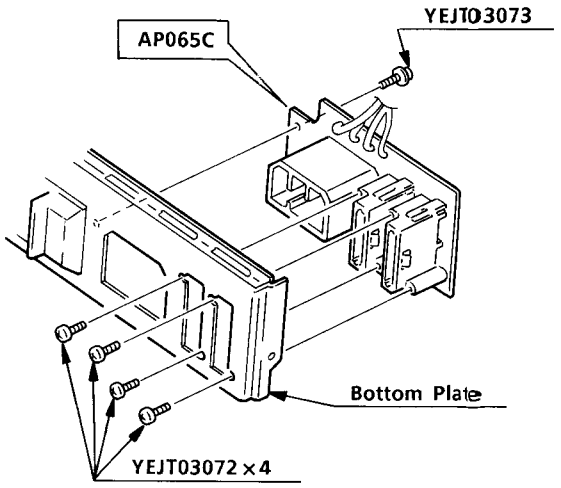
3) FRONT/REAR PLATE REMOVAL

- Take out the seven screws.



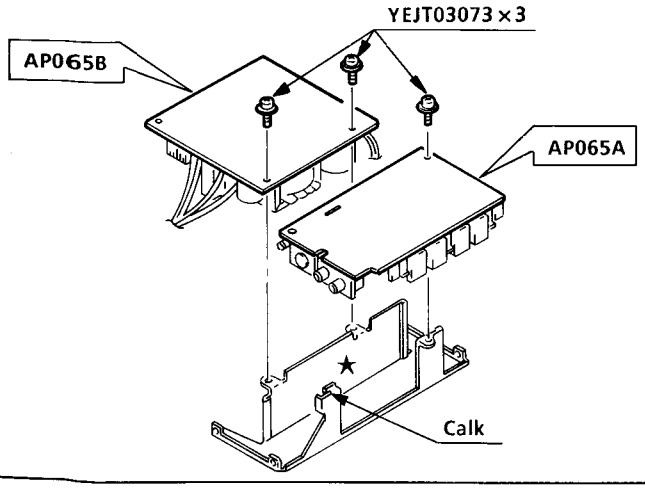
4) PCB (AP065C) REMOVAL

- Take out the five screws.

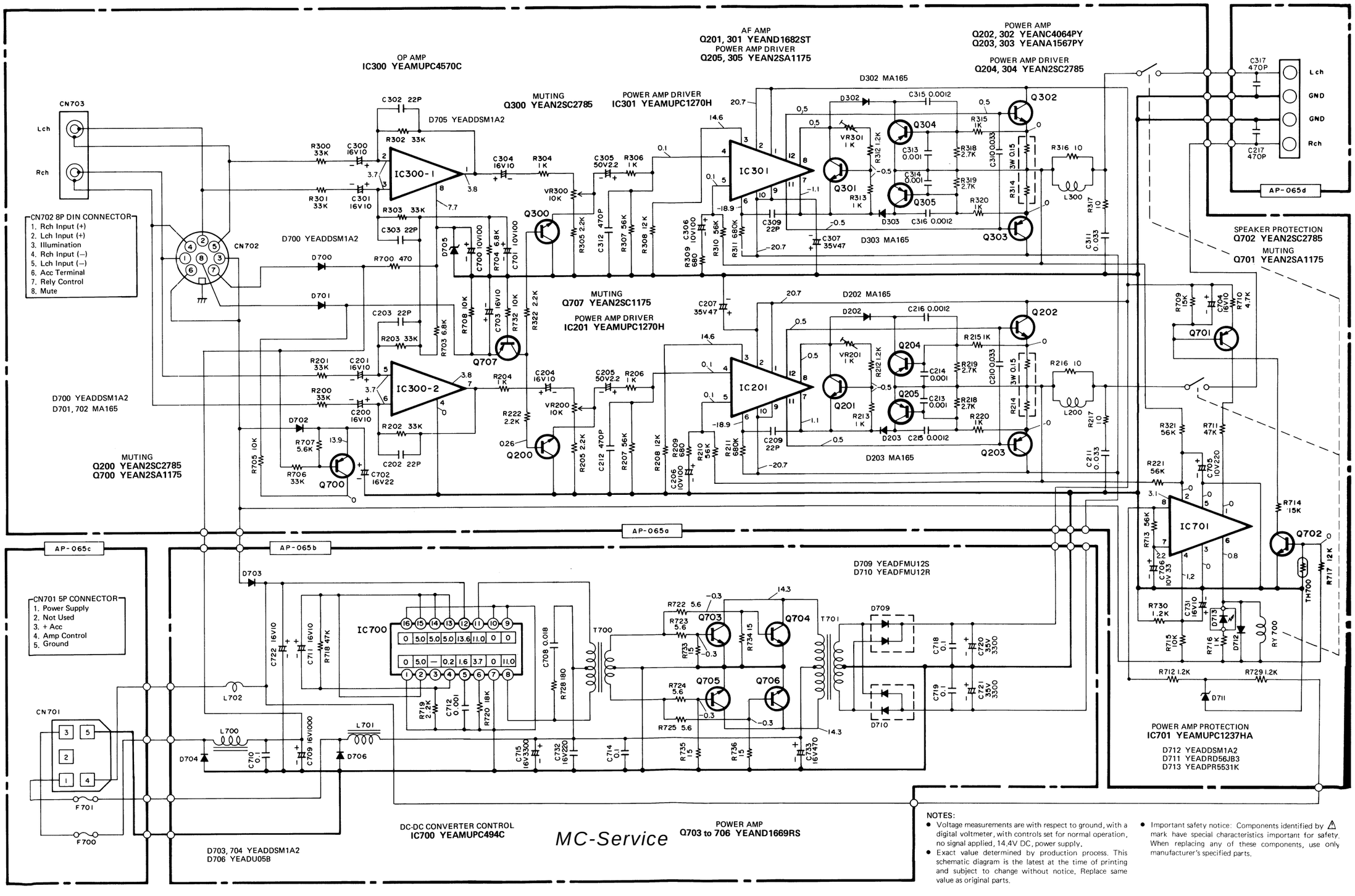


5) PCB REMOVAL

- Take out the three screws.
- Remove the calking. (★ mark)



SCHEMATIC DIAGRAM MODEL CX-M120EN



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NOTES:

- Voltage measurements are with respect to ground, with a digital voltmeter, with controls set for normal operation, no signal applied, 14.4V DC, power supply.
- Exact value determined by production process. This schematic diagram is the latest at the time of printing and subject to change without notice. Replace same value as original parts.
- Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

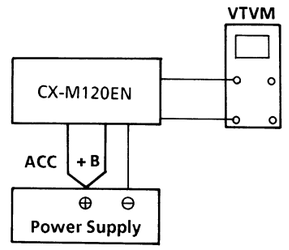
STEREO POWER AMPLIFIER

Jan., 1988

ALIGNMENT POINT AND ALIGNMENT INSTRUCTIONS

1. ALIGNMENT CONDITION

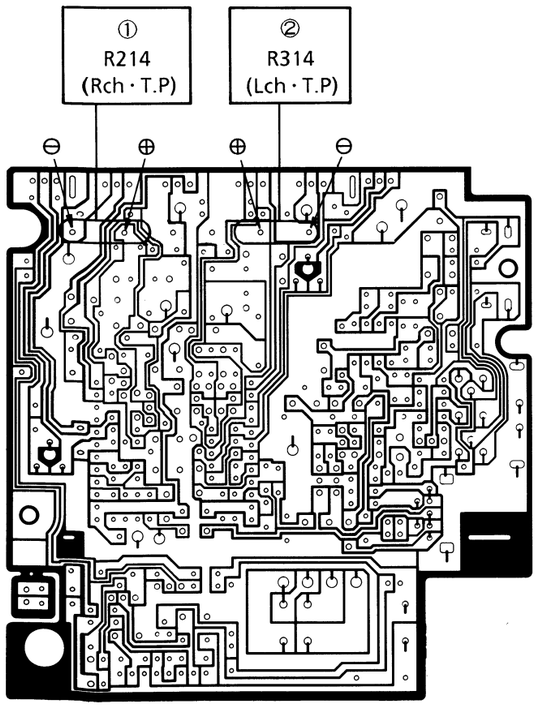
- Power Supplly : 14.4V DC
- Load : Open
- VR201, 301 : Fully counterclockwise
- Connect a relay control lead and ACC input lead.

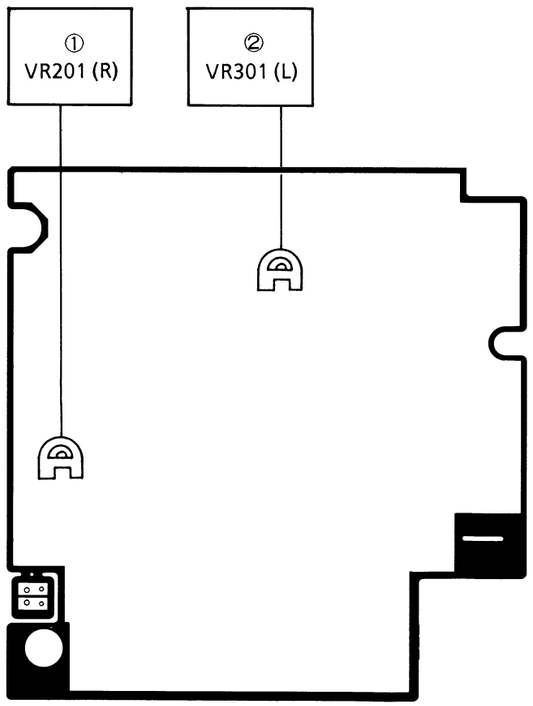


2. AIDRING CURRENT ALIGNMENT

Step	Alignment Item	Channel	VTVM Connection	Adjust	Remarks
1	Aidring Current	Rch	R214 (+) GND (–)	VR201	• Adjust for 6^{+2}_{-3} mV. • Slowly rote VR201, VR301. • Connect voltmater, so that it will happen pattern short.
2		Lch	R314 (+) GND (–)	VR301	

3. ALIGNMENT POINTS





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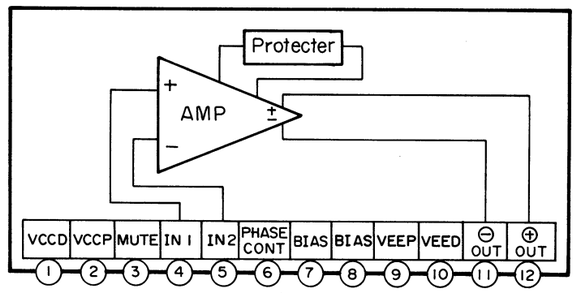
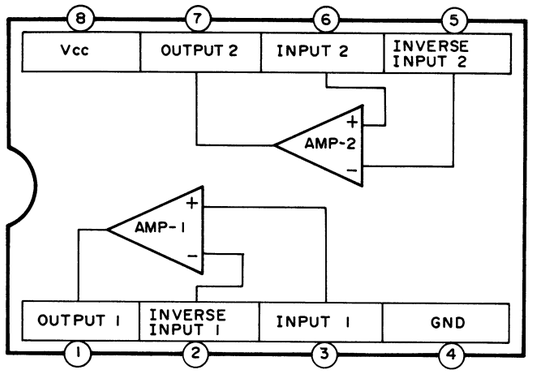
IC BLOCK DIAGRAM

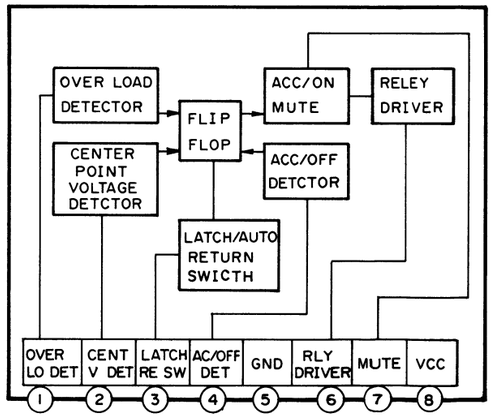
●YEAMUPC1270H



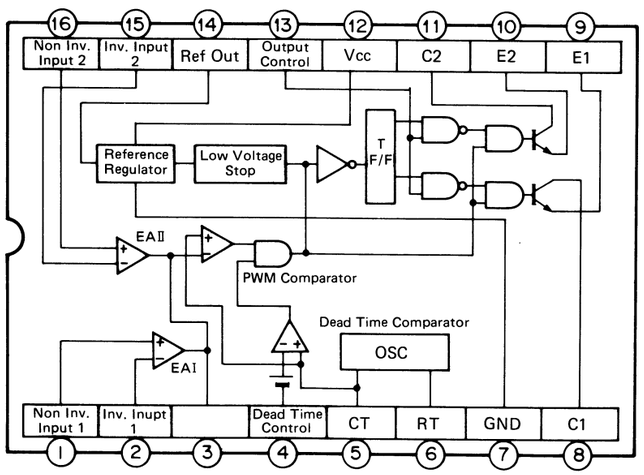
●YEAMUPC4570C



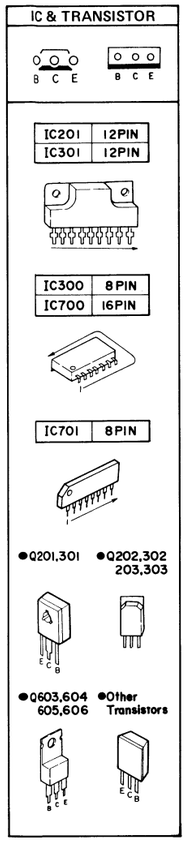
●YEAMUPC1237HA

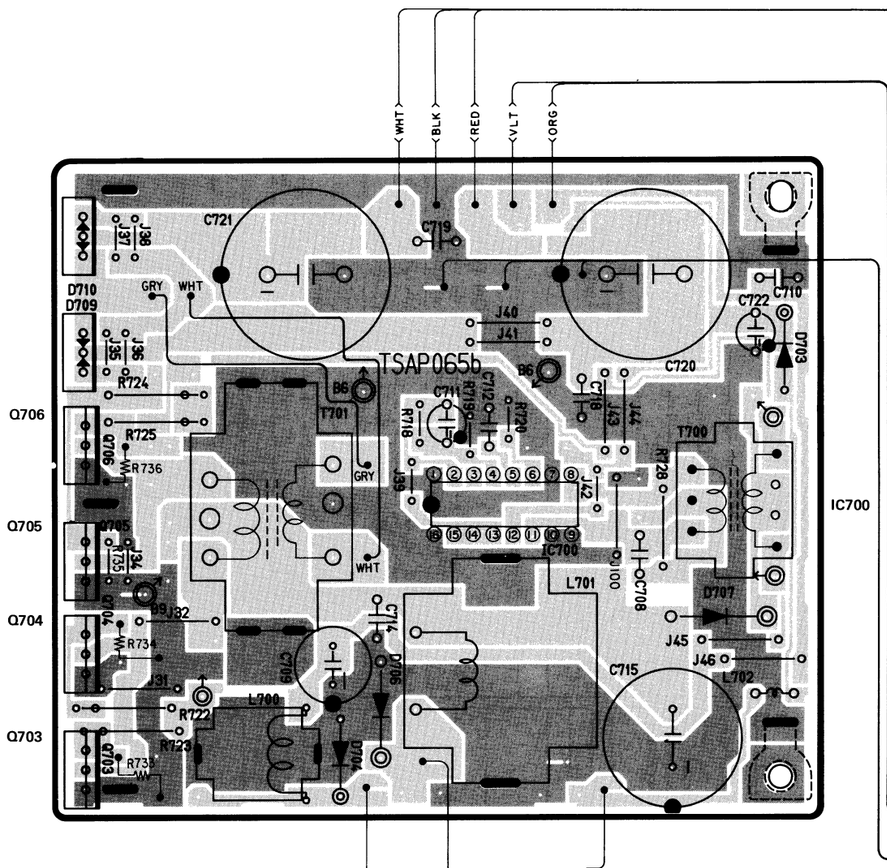


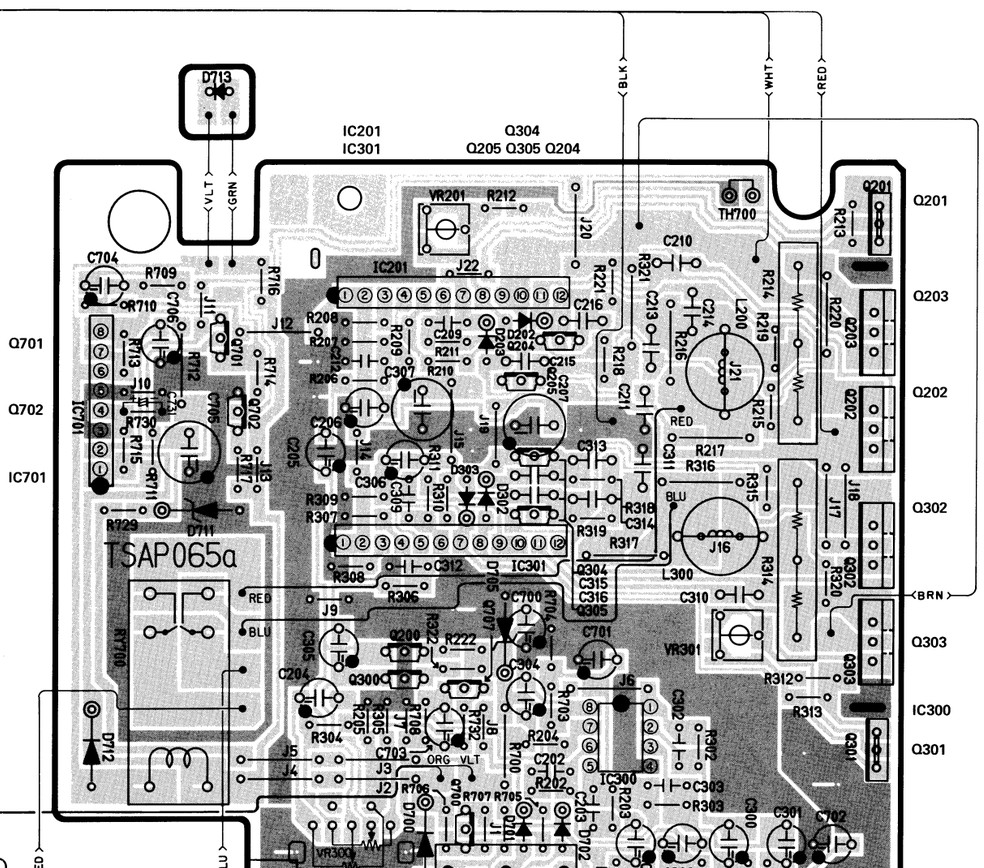
●YEAMUPC494G

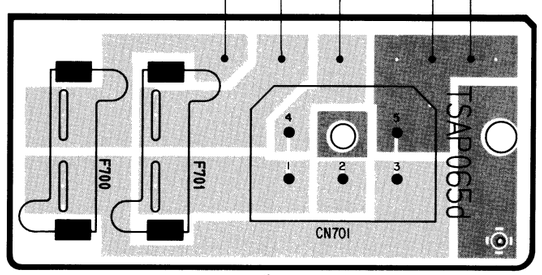


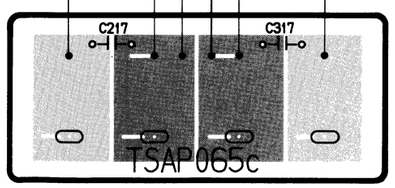
WIRING DIAGRAM MODEL CX-M120EN











Q706	
B	−0.3V
C	14.3V
E	0V

Q705	
B	−0.3V
C	14.3V
E	0V

Q704	
B	−0.3V
C	14.3V
E	0V

Q703	
B	−0.3V
C	14.3V
E	0V

IC700			
1	0V	9	0V
2	5.0V	10	0V
3	—	11	11.0V
4	0.2V	12	13.6V
5	1.6V	13	5.0V
6	3.7V	14	5.0V
7	0V	15	5.0V
8	11.0V	16	0V

Q205	
B	0V
C	−1.0V
E	0V

Q304	
B	0V
C	0.5V
E	0V

Q305	
B	0V
C	−1.0V
E	0V

Q204	
B	0V
C	0.5V
E	0V

Q201	
B	−0.5V
C	0.5V
E	−1.1V

Q203	
B	−0.5V
C	−20.7V
E	0V

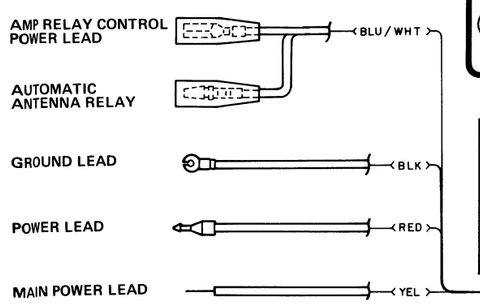
Q202	
B	0.5V
C	20.7V
E	0V

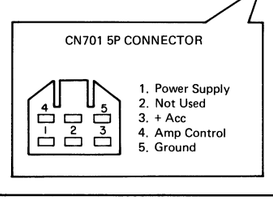
Q302	
B	0.5V
C	20.7V
E	0V

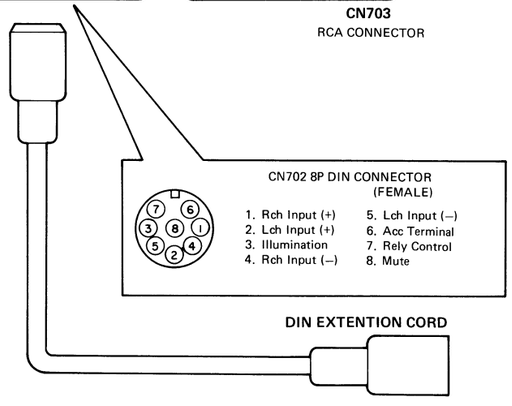
Q303	
B	−0.5V
C	−20.7V
E	0V

Q301	
B	−0.5V
C	0.5V
E	−1.1V

IC300	
1	3.8V
2	3.7V
3	3.7V
4	0V
5	3.7V
6	3.7V
7	3.8V
8	7.7V







IC701			
1	0V	5	0V
2	0V	6	0.8V
3	0V	7	2.2V
4	1.2V	8	3.1V

IC201					
1	20.7V	5	0.1V	9	−20.7V
2	20.7V	6	−18.9V	10	−20.7V
3	14.6V	7	−1.1V	11	−0.5V
4	0.1V	8	0.5V	12	0.5V

IC301					
1	20.7V	5	0.1V	9	−20.7V
2	20.7V	6	−18.9V	10	−20.7V
3	14.6V	7	−1.17V	11	−0.5V
4	0.1V	8	0.5V	12	0.5V

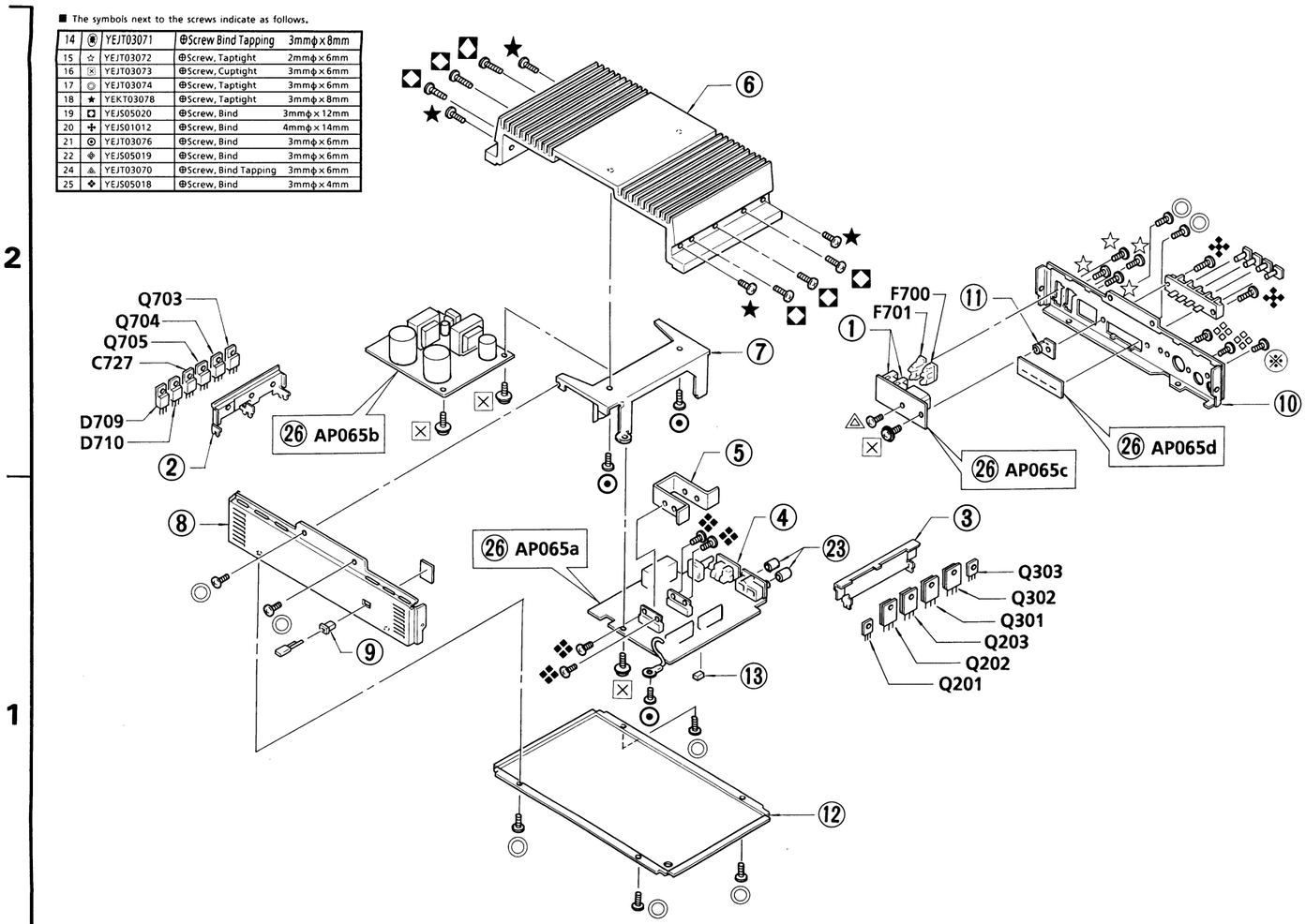
STEREO POWER AMPLIFIER

EXPLODED VIEW

■ Numbers in ○ are indicated REF. No. in the REPLACEMENT PARTS LIST.

■ The symbols next to the screws indicate as follows.

14	⊛	YEJT03071	⊕Screw Bind Tapping	3mmϕ×8mm
15	☆	YEJT03072	⊕Screw, Taptight	2mmϕ×6mm
16	☒	YEJT03073	⊕Screw, Cuptight	3mmϕ×6mm
17	◎	YEJT03074	⊕Screw, Taptight	3mmϕ×6mm
18	★	YEKT03078	⊕Screw, Taptight	3mmϕ×8mm
19	◘	YEJS05020	⊕Screw, Bind	3mmϕ×12mm
20	✣	YEJS01012	⊕Screw, Bind	4mmϕ×14mm
21	⊙	YEJT03076	⊕Screw, Bind	3mmϕ×6mm
22	❖	YEJS05019	⊕Screw, Bind	3mmϕ×6mm
24	⚠	YEJT03070	⊕Screw, Bind Tapping	3mmϕ×6mm
25	❖	YEJS05018	⊕Screw, Bind	3mmϕ×4mm



Replacement Parts List
Model NO. CX-M120EN

NOTES :

1. Be sure to make your orders of replacement parts according to this list.
2. Important safety notice : Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. Next to the Ref. No. in the parts list is a location key, to show the general location of the parts shown in the exploded drawing, as in a road map.
4. Printed circuit board assembly with mark (NLA) is no longer available after production discontinuation of the complete set.

MODEL CX-M120EN

Ref. No.	Part No.	Part Code	Part Name & Description	Pcs set	Remarks
MISCELLANEOUS					
⚠F700 (2-B)	YEAF01019		Fuse, 15A	1	
⚠F701 (2-B)	YEAF01018		Fuse, 3A	1	
CN700	YEAE011156		5P Connector	1	
CN702	YEAE011155		8P DIN Connector	1	
CN703	YEAE011154		RCA 2P Jack	1	
1 (2-B)	YEFK02056		Fuse Holder	2	
2 (2-A)	YEFX0212354		Mounting Bracket (A)	1	
3 (1-B)	YEFX0212355		Mounting Bracket (B)	1	
4 (1-B)	YEFX0212309		Mounting Bracket for DIN	1	
5 (2-B)	YEFF01543		Heat Sink	1	
6 (2-B)	YEFF01552		Heat Sink	1	
7 (2-B)	YEFX0212353		Mounting Bracket for PCB	1	
8 (1-A)	YEFA07200		Front Plate	1	
9 (1-A)	YEFK04506		LED Holder	1	
10 (2-C)	YEFA08306		Rear Plate	1	
11 (2-C)	YEFX0212307		Mounting Bracket for PCB	1	
12 (1-B)	YEFA05405		Bottom Plate	1	
13 (1-B)	YEFS01723		Pad	1	
14 ⊛	YEJT03071		⊕Screw, Bind Tapping 3mmϕ×8mm	1	
15 ☆	YEJT03072		⊕Screw, Taptight 2mmϕ×6mm	4	
16 ☒	YEJT03073		⊕Screw, Cuptight 3mmϕ×6mm	4	
17 ◎	YEJT03074		⊕Screw, Taptight 3mmϕ×6mm	8	
18 ★	YEJT03078		⊕Screw, Taptight 3mmϕ×8mm	4	
19 ◘	YEJS05020		⊕Screw,Bind 3mmϕ×12mm	6	
20 ✣	YETS01012		⊕Screw,Bind 4mmϕ×14mm	2	
21 ⊙	YEJT03076		⊕Screw, Bind 3mmϕ×6mm	3	
22 ❖	YEJT05019		⊕Screw, Bind 3mmϕ×6mm	2	
23 (2-B)	YEFR04187		Cap	2	
24 ⚠	YEJT03070		⊕Screw, Bind Tapping 3mmϕ×6mm	1	
25 ❖	YEJS05018		⊕Screw, Bind 3mmϕ×4mm	4	
26	YESAP106		PCB w/Component	1	NLA
INSTALLATION PARTS					
A1	YEAJ02419		Power Connector	1	
A2	YEAJ02428		Power Extension Cord	1	
A3	YEAE11158		DIN Extension Cord	1	
A4	YBAE01051		Wire Nut	1	
A5	YBFR01015		Bushing	1	
A6	YEJT03079		⊕Screw, Tapping 5mmϕ×20mm	2	
PRINTINGS					
	YEFM281374		Instruction Book	1	
	YEFM281379		Instruction Book	1	

Ref. No.	Part No.	Part Code	Part Name & Description	Pcs set	Remarks
[AP2066]			**ICs & TRANSISTORS**		
IC201	YEAMUPC1270H		Power Amp Driver	1	
IC300	YEAMUPC4570C		OP Amp	1	
IC301	YEAMUPC1270H		Power Amp Driver	1	
IC700	YEAMUPC494C		DC / DC Converter Control	1	
IC701	YEAMUPC1237HA		Power Amp Protection	1	
Q200	YEAN2SC2785		Muting	1	
Q201	YEAND1682ST		AF Amp	1	
Q202	YEANC4064PY		Power Amp	1	
Q203	YEANA1567PY		Power Amp	1	
Q204	YEAN2SC2785		Power Amp Driver	1	
Q205	YEAN2SA1175		Power Amp Driver	1	
Q300	YEAN2SC2785		Muting	1	
Q301	YEAND1682ST		AF Amp	1	
Q302	YEANC4064PY		Power Amp	1	
Q303	YEANA1567PY		Power Amp	1	
Q304	YEAN2SC2785		Power Amp Driver	1	
Q305	YEAN2SA1175		Power Amp Driver	1	
Q700, 701	YEAN2SA1175		Muting	2	
Q702	YEAN2SC2785		Speaker Protection	1	
Q703 to 706	YEAND1669RS		Power Amp	4	
Q707	YEAN2SA1175		Muting	1	
[AP2066]			**DIODES**		
D202, 203	MA165			2	
D302, 303	MA165			2	
D700	YEADDSM1A2			1	
D701, 702	MA165			2	
D703, 704	YEADDSM1A2			2	
D705	YEADRD82EB1		Zener Diode (8.2V)	1	
D706, 707	YEADU05B			2	
D709	YEADFMU12S			1	
D710	YEADFMU12R			1	
D711	YEADRD56JB3		Zener Diode (5.6V)	1	
D712	YEADDSM1A2			1	
D713	YEADPR5531K		LED (Red)	1	
[AP2066]					
C200, 201	ECEA1CU100		10 MFD 16WV Electrolytic	2	
C202, 203	YEU05SL220J		22 PF 50WV Ceramic	2	
C204	ECEA1CU100		10 MFD 16WV Electrolytic	1	
C205	ECEA1HU2R2		2.2 MFD 50WV Electrolytic	1	
C206	ECEA1AU101		100 MFD 10WV Electrolytic	1	
C207	ECEA1VU470		47 MFD 35WV Electrolytic	1	
C209	YEU05SL220J		22 PF 50WV Ceramic	2	
C210, 211	YECQZ1H333K		0.033 MFD 50WV Polyester	2	
C212	YEU05B471K		470 PF 50WV Ceramic	1	
C213, 214	YECQZ1H102K		0.001 MFD 50WV Polyester	2	
C215, 216	YECQZ1H122K		0.0012 MFD 50WV Polyester	2	
C300, 301	ECEA1CU100		10 MFD 16WV Electrolytic	2	
C302, 303	YEU05SL220J		22 PF 50WV Ceramic	2	
C304	ECEA1CU100		10 MFD 16WV Electrolytic	1	
C305	ECEA1HU2R2		2.2 MFD 50WV Electrolytic	1	
C306	ECEA1AU101		100 MFD 10WV Electrolytic	1	
C307	ECEA1VU470		47 MFD 35WV Electrolytic	1	
C309	YEU05SL220J		22 PF 50WV Ceramic	2	
C310, 311	YECQZ1H333K		0.033 MFD 50WV Polyester	2	
C312	YEU05B471K		470 PF 50WV Ceramic	1	
C313, 314	YECQZ1H102K		0.001 MFD 50WV Polyester	2	
C315, 316	YECQZ1H122K		0.0012 MFD 50WV Polyester	2	
C700, 701	ECEA1AU101		100 MFD 10WV Electrolytic	2	
C702	ECEA1CU220		22 MFD 16WV Electrolytic	1	
C703, 704	ECEA1CU100		10 MFD 16WV Electrolytic	2	
C705	ECEA1AU221		220 MFD 10WV Electrolytic	1	

Ref. No.	Part No.	Part Code	Part Name & Description	Pcs set	Remarks
C706	ECEA1AU330		33 MFD 10WV Electrolytic	1	
C708	YECQZ1H182K		0.0018 MFD 50WV Polyester	1	
C709	ECEA1CU102		1000 MFD 16WV Electrolytic	1	
C711	ECEA1CU100		10 MFD 16WV Electrolytic	1	
C712	YECQZ1H102K		0.001 MFD 50WV Polyester	1	
C714	YECQZ1H104K		0.1 MFD 50WV Polyester	1	
C715	YEECUPF1C332		3300 MFD 16WV Electrolytic	1	
C718, 719	YECQZ1H104K		0.1 MFD 50WV Polyester	2	
C720, 721	YEECLGF1E332		3300 MFD 25WV Electrolytic	2	
C722	ECEA1CU100		10 MFD 16WV Electrolytic	1	
C731	ECEA1CK100		10 MFD 16WV Electrolytic	1	
C732	ECEA1CU221		220 MFD 16WV Electrolytic	1	
C733	ECEA1CK471		470 MFD 16WV Electrolytic	1	
[AP2066]			**RESISTORS**		
R200 to 203	ERDS2TJ333		33k ohms 1/4W Carbon	4	
R204	ERDS2TJ102		1k ohms 1/4W Carbon	1	
R205	ERDS2TJ222		2.2k ohms 1/4W Carbon	1	
R206	ERDS2TJ102		1k ohms 1/4W Carbon	1	
R207	ERDS2TJ563		56k ohms 1/4W Carbon	1	
R208	ERDS2TJ123		12k ohms 1/4W Carbon	1	
R209	ERDS2TJ681		680 ohms 1/4W Carbon	1	
R210	ERDS2TJ563		56k ohms 1/4W Carbon	1	
R211	ERDS2TJ684		680k ohms 1/4W Carbon	1	
R212	ERDS2TJ122		1.2k ohms 1/4W Carbon	1	
R213	ERDS2TJ102		1k ohms 1/4W Carbon	1	
R214	ERGC33TR15K		0.15 ohms 3W Cement	1	
R215	ERDS2TJ102		1k ohms 1/4W Carbon	1	
R216, 217	ERDS1FJ100		10 ohms 1/2W Carbon	2	
R218, 219	ERDS2TJ272		2.7k ohms 1/4W Carbon	2	
R220	ERD25TJ102		1k ohms 1/4W Carbon	1	
R221	ERDS2TJ563		56k ohms 1/4W Carbon	1	

Ref. No.	Part No.	Part Code	Part Name & Description	Pcs set	Remarks
R222	ERDS2TJ222		2.2k ohms 1/4W Carbon	1	
R300 to 303	ERDS2TJ333		33k ohms 1/4W Carbon	4	
R304	ERDS2TJ102		1k ohms 1/4W Carbon	1	
R305	ERDS2TJ222		2.2k ohms 1/4W Carbon	1	
R306	ERDS2TJ102		1k ohms 1/4W Carbon	1	
R307	ERDS2TJ563		56k ohms 1/4W Carbon	1	
R308	ERDS2TJ123		12k ohms 1/4W Carbon	1	
R309	ERDS2TJ681		680 ohms 1/4W Carbon	1	
R310	ERDS2TJ563		56k ohms 1/4W Carbon	1	
R311	ERDS2TJ684		680k ohms 1/4W Carbon	1	
R312	ERDS2TJ122		1.2k ohms 1/4W Carbon	1	
R313	ERDS2TJ102		1k ohms 1/4W Carbon	1	
R314	ERGC33TR15K		0.15 ohms 3W Cement	1	
R315	ERDS2TJ102		1k ohms 1/4W Carbon	1	
R316, 317	ERDS1FJ100		10 ohms 1/2W Carbon	2	
R318, 319	ERDS2TJ272		2.7k ohms 1/4W Carbon	2	
R320	ERDS2TJ102		1k ohms 1/4W Carbon	1	
R321	ERD25TJ563		56k ohms 1/4W Carbon	1	
R322	ERDS2TJ222		2.2k ohms 1/4W Carbon	1	
R700	ERD25TJ471		470 ohms 1/4W Carbon	1	
R703, 704	ERDS2TJ682		6.8k ohms 1/4W Carbon	2	
R705	ERDS2TJ103		10k ohms 1/4W Carbon	1	
R706	ERDS2TJ333		33k ohms 1/4W Carbon	1	
R707	ERDS2TJ562		5.6k ohms 1/4W Carbon	1	
R708	ERDS2TJ103		10k ohms 1/4W Carbon	1	
R709	ERDS2TJ153		15k ohms 1/4W Carbon	1	
R710	ERDS2TJ472		4.7k ohms 1/4W Carbon	1	
R711	ERDS2TJ473		47k ohms 1/4W Carbon	1	
R712	ERD25TJ122		1.2k ohms 1/4W Carbon	1	
R713	ERDS2TJ563		56k ohms 1/4W Carbon	1	
R714	ERDS2TJ153		15k ohms 1/4W Carbon	1	
R715	ERDS2TJ103		10k ohms 1/4W Carbon	1	
R716	ERDS2TJ102		1k ohms 1/4W Carbon	1	
R717	ERDS2TJ123		12k ohms 1/4W Carbon	1	

Ref. No.	Part No.	Part Code	Part Name & Description	Pcs set	Remarks
R718	ERDS2TJ473		47k ohms 1/4W Carbon	1	
R719	ERDS2TJ222		2.2k ohms 1/4W Carbon	1	
R720	ERDS2TJ183		18k ohms 1/4W Carbon	1	
R722 to 725	ERX1SJ5R6		5.6 ohms 1W Metal Film	4	
R729, 730	ERDS2TJ122		1.2k ohms 1/4W Carbon	2	
R732	ERDS2TJ103		10k ohms 1/4W Carbon	1	
R733 to 736	ERDS1FJ150		15 ohms 1/2W Carbon	4	
R737	ERG1SJ220		22 ohms 1W Wire Wound	1	
VARIABLE RESISTORS					
VR201, 301	YESVR025		1k ohms Semi Fixed	2	
VR200, 300	YESVR024		10k ohms	2	
THERMISTOR					
TH700	YESAQ02002			1	
RELAY					
RY700	YEAS15033		Relay	1	
COILS AND TRANSFORMERS					
L200, 300	YELQ12N055		RF Coil	2	
L700	YETQ020F054A		Choke Coil	1	
L701	YETQ030F088		Choke Coil	1	
L702	YELQ05N056		Choke Coil	1	
T700	YETQ044F098		Drive Transformer	1	
T701	YETQ044F100		Drive Transformer	1	